REMARKS

By the present amendment and response, claims 1, 5, 11, 17, 23, and 30 have been amended to overcome the Examiner's objections. Claims 1-34 are pending in the present application. Reconsideration and allowance of pending claims 1-34 in view of the following remarks are requested.

The Examiner has rejected claims 1, 4-5, 12-13, 17, and 19 under 35 USC §102(b) as being anticipated by a paper entitled "A Design System for RFIC: Challenges and Solutions," Proceedings of the IEEE, Vol. 88, No. 10, October 2000, pp. 1613-1632, by Miliozzi et al. ("Miliozzi"). For the reasons discussed below, Applicant respectfully submits that the present invention, as defined by amended independent claims 1, 11, and 23, is patentably distinguishable over Miliozzi.

The present invention, as defined by amended independent claim 1, includes, among other things, receiving a plurality of parameter values for a multi-component circuit, where the plurality of parameter values comprises at least a slice parameter value, and where the plurality of parameter values determines a plurality of parasitic values of the multi-component circuit, and generating a layout of the multi-component circuit utilizing the plurality of parameter values, where the layout causes the multi-component circuit to have the plurality of parasitic values. As disclosed in the present application, the present invention utilizes a number of parameter values to accurately predict a mult-component circuit's internal parasitics, such a internal parasitic resistors and capacitors, prior to generating the multi-component circuit's layout. For example, the multi-

component circuit can comprise a differential pair, a differential pair with current source, or a current mirror.

As disclosed in the present application, the number of parameter values can include a slice parameter value, which determines the number of "sub-multi-component circuits" that are connected in parallel in a multi-component circuit layout. For example, for a multi-component circuit comprising a differential pair, the differential pair slice parameter determines the number of "sub-differential pairs" that are connected together in a differential pair layout.

By accurately predicting the internal parasitics of the multi-component circuit prior to layout generation, the internal parasitics do not have to be extracted from the multi-component circuit's layout. Thus, since fewer parasitics have to be considered, post-layout simulation of a circuit block comprising a multi-component circuit, such as a differential pair, in the present invention is much faster and more predictable than post-layout simulation of the same circuit block in a conventional design system. As a result, the present invention achieves an acceptable circuit block layout without requiring many circuit block design, simulation, and layout generation cycles, as required by conventional design systems. Consequently, the present invention's design system advantageously reduces the time-to-market for circuit blocks comprising multi-component circuits, such as differential pairs, differential pairs with current sources, and current mirrors.

In contrast to the present invention as defined by amended independent claim 1, Miliozzi does not teach, disclose, or suggest receiving a plurality of parameter values for

a multi-component circuit, where the plurality of parameter values comprises at least a slice parameter value, and where the plurality of parameter values determines a plurality of parasitic values of the multi-component circuit, and generating a layout of the multi-component circuit utilizing the plurality of parameter values, where the layout causes the multi-component circuit to have the plurality of parasitic values.   Miliozzi specifically discloses an RFIC design flow including circuit design, circuit simulation, circuit layout generation, layout design rule check, layout verification, parasitic extraction, and resimulation of the whole circuit. See, for example, page 1618, first column and Figure 4 of Miliozzi.

However, Miliozzi fails to teach, disclose, or suggest generating a layout of a multi-component circuit that causes the multi-component circuit to have a plurality of parasitic values, where the plurality of parasitic values is determined by a plurality of parameter values, and where the plurality of parameter values include at least a slice parameter. Miliozzi discloses a number of parameters, such as W (width of a gate finger), L (length of a gate finger), and number of fingers, of a device, such as a transistor, that affect the performance of the device. See, for example, Miliozzi, page 1620, first column. However, the parameters disclose in Miliozzi refer to a single device, i.e. a transistor, and not a multi-component circuit as specified in amended independent claim 1. Furthermore, Miliozzi fails to teach, disclose, or suggest any relationship between a plurality of parameter values, which includes at least a slice parameter value, of a multi-component circuit and a plurality of parasitic values of the multi-component circuit.

Miliozzi further discloses that different aspect-ratios of devices can be generated by varying the geometric parameters of the instances, such as changing the number of fingers of a transistor. See, for example, Miliozzi, page 1625, column 2. However, a parameter value for the number of fingers of a transistor is not the same as a slice parameter value, which, as discussed above, determines the number of "sub-multi-component circuits" that are connected in parallel in a multi-component circuit layout. A transistor can have a number of fingers and not be broken up into a number of sub-transistors in a transistor layout. Thus, Miliozzi fails to teach, disclose, or remotely suggest a slice parameter value for a multi-component circuit as specified in amended independent claim 1.

For the foregoing reasons, Applicant respectfully submits that the present invention, as defined by amended independent claim 1, is not suggested, disclosed, or taught by Miliozzi. Thus, amended independent claim 1 is patentably distinguishable over Miliozzi and, as such, claims 2-10 depending from amended independent claim 1 are, *a fortiori*, also patentably distinguishable over Miliozzi for at least the reasons presented above and also for additional limitations contained in each dependent claim.

The present invention, as defined by amended independent claim 11, includes, among other things, receiving a plurality of parameter values for at least one multi-component circuit, where the plurality of parameter values comprises at least a slice parameter value, determining a plurality of parasitic values for the at least one multi-component circuit, and generating a layout of a circuit block including the at least one

multi-component circuit, where the layout causes the at least one multi-component circuit to have the plurality of parasitic values. Amended independent claim 11 includes similar limitations as specified in amended independent claim 1. Thus, for similar reasons as discussed above, the present invention, as defined by amended independent claim 11, is not suggested, disclosed, or taught by Miliozzi. Thus, the present invention, as defined by amended independent claim 11, is also patentably distinguishable over Miliozzi and, as such, claims 12-22 depending from amended independent claim 11 are, *a fortiori*, also patentably distinguishable over Miliozzi for at least the reasons presented above and also for additional limitations contained in each dependent claim.

The present invention, as defined by amended independent claim 23, includes, among other things, a computer receiving a plurality of parameter values for at least one multi-component circuit in a circuit block, where the plurality of parameter values comprise at least one slice parameter value, the computer determining a plurality of parasitic values for the at least one multi-component circuit, and the computer generating a layer of the at least one multi-component circuit utilizing the plurality of parameter values, where the layout causes the at least one multi-component circuit to have the plurality of parasitic values. Amended independent claim 23 includes similar limitations as specified in amended independent claim 1. Thus, for similar reasons as discussed above, the present invention, as defined by amended independent claim 23, is not suggested, disclosed, or taught by Miliozzi. Thus, the present invention, as defined by amended independent claim 23, is also patentably distinguishable over Miliozzi and, as

such, claims 24-34 depending from amended independent claim 11 are, *a fortiori*, also

patentably distinguishable over Miliozzi for at least the reasons presented above and also

for additional limitations contained in each dependent claim.

Based on the foregoing reasons, the present invention, as defined by amended

independent claims 1, 11, and 23 and claims depending therefrom, is patentably

distinguishable over the art cited by the Examiner. Thus, claims 1-34 pending in the

present application are patentably distinguishable over the art cited by the Examiner. As

such, and for all the foregoing reasons, an early allowance of claims 1-34 pending in the

present application is respectfully requested.

Attorney Docket No.: 01CON214P

Respectfully Submitted,
FARJAMI & FARJAMI LLP

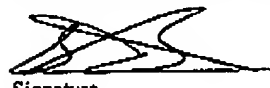Date: _5/19/04_

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